Trees and Shrubs Provide
- Beauty
- Wind protection
- Shade
- Wildlife habitat
- Visual Screening

Topics of the Day
- Buying Trees
- Digging Holes
- Planting Trees
- Post Planting Care

Purchasing Trees and Shrubs
- Buy quality stock from reputable nurseries, garden centers, landscape contractors, or mail-order companies

Find Good Nurseries
Selection Criteria
- Select trees that are
- Well-cared for
- Show healthy trunks
- Have a healthy root system
- Not root-bound
- Have adequate guarantees

Buying Trees
- Avoid purchasing trees with broken branches or poor architecture

Buying Trees
- Avoid purchasing trees with:
  - Multiple leaders
  - Distorted branches
  - Water sprouts
Buying Trees
• Never buy trees with insect or disease problems

Buying Trees
• Never buy poorly maintained, under or over watered trees

Buying Trees
• Never buy trees that are poorly acclimated to our conditions

Bare Root Plants
• Limited to spring planting in Utah
• Less expensive
• Limited to deciduous diameter < 3” at base
• Limited to evergreens < 2’ tall
• Have no soil around the roots

Types of Stock
• Bare Root

Bare root
• PRO:
  – Lightweight
  – Easy to ship
  – Easy to find root flare
  – Assess root system health

Bare root
• CON:
  – Tree must be dormant
  – Reduced planting time
  – Limited selection
  – Potential for root problems

Types of Stock
• Container Stock

Container Plants
• More expensive than bare-root plants but less than balled and burlapped
• Heavier than bare-root plants but less than balled and burlapped
• Can have circling roots that need cutting before planting

Containerized
• PRO:
  – Wide selection
- Cheaper
- Large planting window

Containerized
• CON:
  - Circling roots
  - Difficult to find root flare

All Roots are Included
Careful Attention to Pot Shifting
Check Roots Carefully
Beware the J Root
These Start at the First Transplant

Balled and Burlapped Plants
• Root ball tightly wrapped with burlap, plastic, twine or wire baskets
• More expensive
• Heavier than bare-root plants
• Higher rate of survival
• Preferred for large evergreens

Types of Stock
Ball and Burlap
Ball & Burlapped
• PRO:
  - Wide selection
  - Large trees
  - Large window to plant

Ball & Burlapped
• CON:
  - HEAVY
  - Expensive
  - Difficult to find root flare

Types of Stock
Direct Transplants

Planting
• Trunk & Shoots
  - Above ground, has bark for protection
  - Need oxygen for respiration
  - Need light for photosynthesis
Planting

• Roots
  – Below ground, negative geotropism (grow down)
  – Absorb water & nutrients
  – Need oxygen for respiration

Deep Planting
• Option #1: Die from suffocation

Deep Planting
• Option #2: Adapt.
  – Roots try to grow up to top
  – This is not natural

Deep Planting
• How can you tell if existing trees are planted too deep?
  – Trunks enter the ground ‘flush’
  – Thinning canopies
  – Early fall coloration
  – ‘Decline’

Deep Planting
• Trunks enter the ground ‘flush’

Tree have a Natural Flare
Deep Planting
• Thinning canopies

Deep Planting
• Early fall coloration

Deep Planting
• Decline
Deep Planting
• No good remedy other than prevention

Deep Planting
Roots try unsuccessfully to grow up
Planting Trees Correctly
- The root flare is even or higher than the natural soil grade of planting site.

Planting Trees Correctly
- Roots grow away from trunk in top 6-8” of soil

Root Flare
- ‘Set’ at germination
- Oldest part of tree

Root Flare
- Support

Root Flare
- Storage

Root Flare
- Area of transition from root tissue to trunk tissue

Types of Planting Materials
- Bare root
- Ball & Burlapped (B&B)
- Containerized / Container grown

- Must find the root flare in each

Bare root

B&B

Containerized
Make a cut down each side of the root ball deep enough to sever encircling roots

Cut Containerized Root Balls

How to dig a hole
- Dig hole 3-5x bigger than root system
- Dig hole deep enough to put root flare at the natural soil grade or 1-2” higher
- Slope & roughen sides of planting hole
- Leave bottom of hole undisturbed

The Wrong Way to Plant
Do Not Make Natural Flower Pots That Do Not Drain

Planting-Placement
- Place plant in the center of the hole
- Check vertical trunk alignment
• Root collar should be at or slightly above ground level
Hit The Hole!!!

Planting-Planting
• Remove packing materials and burlap from top of root ball
• Remove damaged or circling roots
• Wire baskets are to protect the root balls; remove the top portion only if it will not damage the ball
• Carefully remove as much of the paper maché as possible

Planting-Backfilling
• Use the same soil taken out to fill in unless soil is extremely poor
• Use up to 25% coarse organic amendment mixed with native soil

Planting-Backfilling
• Break up large clods
• Pack lightly with feet or hands but do not over-pack
• Water and add soil as necessary

Call Blue Stakes!
How to fill a hole
• Backfill ONLY with soil native to the site
  – Amendments can cause moisture problems
  – Promote roots to expand into surroundings

How to fill a hole
• Do not tamp / compact soil
  – Get dirty! Crumble soil and fill crevices carefully by hands
  – Use water to eliminate large air pockets

Post Planting Care
• Water
  – Trees need 1-2” of water per week for first growing season after they leaf out
  – Drip, hose, sprinkler…
  – Do not overwater!

Post Planting Care
• Stake only when Needed
  – Especially important for bare root
  – Secure tree loosely
  – Drive stakes outside root system
  – Use wide straps
  – Remove after one growing season

The Last Tree Roundup
When Did the Last Tree Run Away?

Post Planting Care
• Mulching
  – Add 2-4” of bark chips
  - Avoid volcanoes!

Post Planting Care
• Mulching
  – Holds moisture in soil
  – Improves soil structure

Post Planting Care
• Mulching
  – Insulates roots from temperature extremes

Post Planting Care
• Keep mowers away!

Post Planting Care
Remove grass and skip the flowers

Post Planting Care
• Tree Wrap
  – Used to protect trees during transportation
  – Sometimes useful to protect against animal damage
  – REMOVE!

Post Planting Care
• Pruning
  – Only remove damaged branches at time of planting
  – Designate ‘temporary branches’ for eventual removal
• Fertilization
  – Not necessary

Tree Planting Summary
• Find root flare of tree
• Dig hole 3-5x wider than roots, no deeper than flare
• Align tree in hole as desired
• Backfill with native soil, no tamping
• Stake if necessary for 1 season
• Water as needed
• Prune only broken, diseased branches

Follow-up Maintenance - Pruning
• Prune only to remove dead wood and damage for first 3-4 years
• Do not prune more than necessary for at least 1 year

Follow-up Maintenance - Water
• Water thoroughly at planting
• Water enough to soak root ball at each watering.
• Avoid over-watering, particularly in heavy clay soils

Follow-up Maintenance - Fertilizer
• Do not fertilize at planting
• Fertilize after trees are established and have recovered from transplanting
• Tree transplant-recovery is usually 2 to 3 years

Follow-up Maintenance - Mulch
• Use wood chips 3-6” thick at base of tree
• Wide mulch at least 2’ out from trunk

Follow-up Maintenance - Staking
• Use only in
• High wind areas
• Vandal-Prone areas
• Place canvas strapping on wires
• Use soft material that will not rub bark while allowing tree movement